

The Future of Standardised Quality Management in Tourism: Evidence from the Spanish Tourist Sector

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Summary

Quality management is gaining more importance in the tourist sector, in particular, by implementing standardized Quality Management Systems (QMS). A forerunner is the Spanish case, in which specific standards have been developed over the last few years for quality management in different tourist sub-sectors, such as hotels, rural accommodation, restaurants, spas and travel agencies, up to a total of seventeen standards.

The current article, of an exploratory nature, sets out to analyse the diffusion of the aforementioned standards, using well-contrasted models in the specialized literature, with a double objective: on the one hand, to forecast the diffusion of the mentioned standards, and, on the other, to present this experience to the rest of the professional, scientific community, interested in improving quality in the tourist sector.

Keywords: quality management; standardisation; ISO 9001, QMS

1. Introduction

In the early 1990s, tourist enterprises in many countries became aware that the competitive advantages that they had previously enjoyed were being eroded. Price competition, which had been a traditional strategy of many tourist companies, had been shown to be unsustainable in a setting characterised by increasing competitiveness, emerging tourist destinations, globalisation, and a range of volatile political, economic, and technological factors, especially greater environmental awareness and a growing concern about climate change (Camisón, 2004; Macleod, 2004; Nicholls, 2004; Hall and Higham, 2005). Moreover, in the past twenty years, consumer habits have undergone significant changes (Tribe, 1999; Esteve, 2001; González and Bello, 2002). Leisure travel and short holiday breaks throughout the year have become increasingly popular with the proliferation of low-cost air travel and the emergence of cheaper tourist destinations (Alonso *et al.*, 2006; Talón *et al.*, 2007). Tourists have become more experienced and are demanding greater value for money and the provision of individualised, flexible service of high quality (Figuerola, 2006; Trunfin *et al.*, 2006).

As a consequence of these developments, businesses in the tourism sector have recognised that they need to adopt *quality strategies* of the sort already incorporated in the manufacturing industry (such as automobile manufacturers) and the service sector (such as banks and hospitals) if they are to differentiate themselves and compete in a new setting characterised by rapid changes in both supply and demand.

In recent years, many empirical studies have analysed quality by assessing *customer satisfaction* in various tourist sub-sectors, including accommodation (Reichel *et al.*, 2000; Albacete *et al.*, 2007), hotels (Sharpley *et al.*, 2003; Tsaur and Yin-Chun Lin, 2004; Briggs *et al.*, 2007), and tourist destinations in general (Graefe and Vaske, 1987; Wall, 1995; Go and Govers, 2000). Other studies have analysed quality by assessing the implementation of various models of *total quality management* (TQM) in service industries (Stuart and Tax, 1996; Sureshchandar *et al.*, 2001, Karapetrovic and Willborn, 2001; Prajogo, 2005). However, none of these various studies of customer satisfaction and/or TQM has focused on an important innovative development in quality management within the tourism sector—quality assurance by implementing *standardised quality-management systems*.

There has been a proliferation of standardised management systems in accordance with various national and international standards in recent years. These standards attempt to systematise various business functions, including: (i) quality management (for example, ISO standards 9001:2000, ISO TS 16949:2002, ISO 10002:2004, and so on); (ii) environmental management (for example, ISO standards 14001:2004, EMAS III, and so on); and (iii) workplace safety (for example, OSHAS 18001:2004). All of these standards have a certain methodology, structure, implementation process, and testing procedure (by a third party) that should facilitate their integration in a unified integrated management system (IMS). In particular, two prominent

families of standards issued by the International Standardization Organization (ISO, 2006) have become widely diffused in a variety of industries: (i) standards related to quality-management systems (the ISO 9000 family of standards); and (ii) standards related to environmental-management systems (the ISO 14000 family of standards) (Marimon *et al.*, 2006).

The application of these two families of quality standards in the tourism industry in Spain is of interest for at least two reasons.

First, Spain has emerged as one of the leading worldwide tourist destinations, with 58.6 million incoming tourists in 2006 (INE, 2006a, 2006b; Instituto de Estudios Turísticos, 2007). The tourist sector in Spain has felt the impact of the above-mentioned changes in tourism in the past two decades, and there is a widespread acceptance in the Spanish tourist sector of the need to focus on improved quality of the products it offers.

Secondly, there is long-standing tradition of implementing quality standards in Spain, not only in the tourist sector but also in a wide range of manufacturing and service industries. In fact, Spain ranks fifth in the world in ISO 9000 certifications (ISO, 2006). In the tourist sector, Spain was the first country in the world to define specific quality standards for each sub-sector and a certification system by an independent third party.

This exploratory study therefore analyses the diffusion of these quality standards in Spanish tourist enterprises, with the aim of gauging their real impact and forecasting their future importance. To assess the diffusion of ISO standards ISO 9001 and ISO 14001 in Spanish tourist enterprises, the study utilises the diffusion model of Marimon *et al.* (2006), which has been shown by Casadesús *et al.* (2008) to have reliable forecasting abilities. On the basis of the findings, the study then proposes a consistent model for forecasting the diffusion of quality standards in the tourist sector.

No similar study of the diffusion of these quality standards in the tourist sector is apparent in the academic literature; indeed, there is apparently no study that has applied this methodology to a study of the diffusion of these quality standards in any service sector.

2. Research setting

2.1 Early quality developments in Spain

Tourist enterprises in Spain, like tourist enterprises elsewhere, have historically complained about the difficulties entailed in gaining ISO certification—especially in view of the associated high costs and the lack of specialised personnel in these organisations (Camisón and Yepes, 1994). These difficulties probably explain the relatively poor penetration rate of the ISO 9000 family of ISO standards in the Spanish tourist sector, with only 749 companies certified up to 2007 (Foro Calidad, 2006) from among almost 100.000 companies that were registered in their activity by

the end of 2000 (counting only accommodation companies, catering firms, and travel agencies) (INEa, 2006).

Despite this relatively poor ISO success rate, Spain has a long and worthy record of endeavour in implementing legislation for consumer protection and occupational health and safety in the tourist industry. These legal requirements regulated the standards of infrastructure and equipment in each category of tourist establishment, but there was a lack of shared rules across the sector.

An early attempt to extend and standardise the requirements for Spanish hotel establishments was made by the Ministry of Industry Trade and Tourism of the Autonomous Government of Valencia in 1994. This was followed by the introduction of the quality certification trademark, ITQ2000, which was promoted by companies in the tourism sector; unfortunately, this trademark, which involved the awarding of three quality levels (gold, silver, and bronze), was barely implemented due to a lack of consensus in the sector.

Despite the lack of success with these initiatives, the Spanish tourism sector has been very much aware of the need to be involved in quality control and to take up the baton of self-regulation by establishing minimum quality standards in each tourist sub-sector and using certification to demonstrate to the market that an effort was being made to improve quality. Indeed, Spain has been a pioneer in Europe in the implementation of private initiatives that have given rise to a wide variety of voluntary quality-certification systems in tourism. Table 1 summarises some of these initiatives.

<<Table 1>>

2.2 SCTE ('Spanish Tourist Quality System')

Against this background, a macro-project known as Sistema de Calidad Turística Española (SCTE) ('Spanish Tourist Quality System') has been conducted throughout Spain since 1996, with the support of the State Tourist Administration. Through this project, the Ministry of Tourism of the Spanish government has provided technical assistance in developing quality systems appropriate to the different tourist sub-sectors (such as hotels, restaurants, travel agencies, and so on). The SCTE thus aimed to provide Spanish tourist enterprises with a methodological tool to enhance their competitive positions by improving the quality of their products and services. Institutional backing was provided in the form of the Spanish Tourist Quality Trademark (known as 'Q').

2.3 ICTE ('Institute for Spanish Tourist Quality')

The strategy of SCTE initially involved the creation of specific quality systems for the various tourist sub-sectors, each of which incorporated certification for establishments and the implementation of continuous quality improvement in organisations. Subsequently, the six sub-sectors (hotels, restaurants, ski and mountain resorts, travel agencies, camp sites, and rural

tourism), each of which had developed its own quality system, believed it necessary to create a single managing body responsible for adopting common objectives. As a result, on the initiative of the tourist business sector and with the support of the State Department of Trade and Tourism, an umbrella body known as the Instituto para la Calidad Turística Española (ICTE) ('Institute for Spanish Tourist Quality') was created in 2000.

The ICTE describes itself as "... a certification organization of quality systems created especially for tourist companies"; it also regards itself as "... a private, Spanish, independent, non-profit organization, recognized worldwide". Its basic functions are:

Standardisation: the creation, development, updating, and reviewing of tourist quality standards in collaboration with all interested parties;

Implementation: the provision of training courses, technical assistance, and publications to support tourist enterprises in their efforts to adapt traditional management systems to quality assurance systems;

Certification: recognition of the implementation of quality systems by the awarding of the Spanish Tourist Quality Trademark; and

Promotion: of the Spanish Tourist Quality Trademark (and the companies that hold it) through publicity campaigns, publications, representations in trade fairs, and press releases.

As shown in Table 2, the ICTE has published 17 different quality standards for tourist enterprises, six of which are correlated with nationwide UNE Standards, which endows them with greater credibility and recognition.

<<Table 2>>

2.4 International quality standards for tourism

On an international level, the Technical Committee of ISO/228 has begun work on the first international standards for tourist services management. Seven standards have been published, and another two are in the latter stages of development. As shown in Table 3, all of these standards, with the exception of one (ISO 18513:2003), have been developed by a working group on 'diving services'; however, standards in other tourist sub-sectors are being developed.

<<Table 3>>

2.5 Spanish 'Q' standards

The ICTE's 'Q system' is a self-regulated standardisation system that establishes quality standards that are compatible with the ISO 9000 and ISO 4000 families of standards. The 'Q system' aims to achieve minimum quality standards, depending on the administrative category, type of service, and type of establishment—although individual companies are free to establish higher standards. The minimum regulations established by the 'Q system' standards contain more stringent criteria than current legislation.

The standards cover: (i) facilities; (ii) the final service delivered to the client; (iii) organisational processes of client services; and (iv) functions and management tools for customer satisfaction. For example, for each organisational process, the standard covers: (i) the conduct and supervision of responsibilities; (ii) service requirements and control mechanisms; and (iii) internal control activities.

Although the 'Q standards' take account of the requirements of ISO 9001:2000 and ISO 14001:2004, they are not identical to them; rather, they are seen as being complementary to the international standards. Some of the main differences between the two quality systems are shown in Table 4.

<<Table 4>>

La adaptación sectorial ha permitido que cada normativa de calidad específica, establezca directrices en bloques. Estos bloques se corresponden con las unidades de servicio propias de cada establecimiento turístico. Para cada uno de estos bloques la norma requiere las responsabilidades de ejecución y supervisión; las condiciones y requerimientos que ha de cumplir el servicio; las especificaciones de proceso y del sistema de gestión y, finalmente, las actividades de control interno que deben realizar los responsables para conocer en todo momento el nivel de servicio que están ofreciendo a los clientes e introducir las mejoras oportunas (Camisón et al., 2006). Un ejemplo del esquema de la norma Q de Hoteles y apartamentos se muestra en la figura 1.

<<Figure 1>>

Es interesante y diferenciador respecto a otros estándares de calidad, destacar que los requisitos que cada norma establece son de tres tipos: variables de obligado cumplimiento de manera inmediata, variables de obligado cumplimiento y variables de obligado cumplimiento a medio plazo o variables complementarias.

Para evaluar el nivel de cumplimiento de los requisitos que establece la norma el modelo plantea dos mecanismos la autoevaluación y la auditoría externa. La autoevaluación funciona de manera similar a cómo lo hace en el modelo EFQM. Consiste en un cuestionario que sirve para que los responsables de la empresa puedan evaluar, desde un punto de vista interno, la adecuación de las instalaciones, equipamientos, servicios y gestión del establecimiento turístico con respecto a los requisitos establecidos en la norma. Esta autoevaluación proporciona la situación real en la que se encuentra la empresa respecto a las variables de calidad que le exige la norma y le permite identificar áreas de mejora. La auditoría externa es una auditoría por una tercera parte independiente siguiendo un procedimiento reglamentado, similar al que se sigue para otros estándares de calidad como las normas ISO, que permite la concesión de la marca y el mantenimiento de la misma.

De acuerdo con Camisón et al. (2006), las variables de obligado cumplimiento de manera inmediata son todas aquellas que se consideran imprescindibles en un servicio de calidad al tratarse de necesidades básicas del cliente. El incumplimiento de estas variables en el momento de la auditoria externa de calidad implica la imposibilidad de obtener la certificación y la concesión de la marca de calidad. Por otra parte, las variables de obligado cumplimiento son aquellas que recogen los valores mínimos que la empresa debe cumplir y su incumplimiento en la auditoria de calidad puede impedir la concesión de la marca, o bien si se le concede a la empresa la marca de calidad, requerirá que la empresa se comprometa a alcanzar dichos valores mínimos en un plazo de tiempo determinado por el comité de certificación. Finalmente, las variables de obligado cumplimiento a medio plazo o variables complementarias son aquellas cuyo incumplimiento en el momento de la auditoria no supone la denegación de la marca de calidad, ni requiere de manera obligatoria su inclusión en un plan de mejora para alcanzar los mínimos en un periodo de tiempo determinado. Sin embargo será necesario que estas variables cumplan los valores mínimos estipulados en el momento de la renovación del certificado.

2.6 Impacto de la implantación del estándar de calidad Q en las empresas turísticas

En la literatura académica se aprecia la existencia de factores internos y externos que motivan la certificación en un sistema de calidad. Aunque no existe un consenso en la doctrina, parece que los factores externos tales como la presión de los clientes, la presión de la competencia y la imagen de la empresa son los más representativos. Entre los factores internos mas señalados destacan la mejora del producto, reducción de los costes de no calidad y la mejora de la eficiencia interna (Shannon et al., 2001; Casadesus y Heras, 2005).

En el caso del impacto de los certificados de calidad en los resultados, los estudios realizados en el sector industrial ponen de manifiesto que la adopción de prácticas de calidad para las empresas supone mejoras en el resultado financiero (Heras et al, 2002; Corbett et al, 2005; Terlaak y King, 2006; Benner y Veloso, 2008); mejoras en el rendimiento operativo (Naveh y Marcus, 2005; Sharma, 2005); incremento en la satisfacción del cliente (Das et al, 2000); mejora de la cuota de mercado (Das et al, 2000; Martínez Lorente et al, 2000; Sanchez Rodriguez y Martinez Lorente, 2004); mejoras en el producto (Ahire y O'Shaughessy, 1998; Ahire y Dreyfus, 2000; Tan, 2001; Ho et al., 2001); entregas a tiempo (Das et al, 2000; Cua et al, 2001); mejoras en las condiciones laborales (Sun, 2000); mayor flexibilidad (Cua et al., 2001); incrementos en la innovación (Prajogo y Sohal, 2003) y acceso a nuevos clientes y mercados (Corbett et al., 2005; Terlaak y King, 2006) entre otros.

Sin embargo, también se han encontrado algunas evidencias menos positivas como la evidencia en contra de la mejora del resultado financiero (Dick, 2000; Morris, 2006); la dilución de los beneficios económicos iniciales a medida que transcurre el tiempo (Wayham et al., 2002;

Casadesus y Karapetrovic, 2005) o la mitigación de los efectos en las mejoras operativas que se adquieren con la certificación a medida que otras empresas del sector adquieren las mismas prácticas (Porter, 1996).

Con el objetivo de realizar estimaciones sobre el sentido de la curva logística en la difusión de este estándar de calidad, se ha realizado tres estudios de casos a tres empresas turísticas certificadas con la Q. En concreto se ha estudiado el caso de una cadena hotelera grande, que consta de 93 hoteles todos ellos certificados; una cadena hotelera mediana que consta de 36 hoteles y un hotel independiente. En total una representación de 130 hoteles.

En los tres casos el perfil del entrevistado ha sido el Director de Operaciones o Responsable de Calidad y se les realizó la misma entrevista en profundidad apoyada por una encuesta con preguntas abiertas donde se preguntaba por los dos principales motivos que les llevo a implantar el sistema Q de calidad, los dos principales beneficios obtenidos y los dos principales inconvenientes con los que se han encontrado en la implantación. La entrevista finalizaba con su opinión sobre el crecimiento del número de certificaciones en España.

En el caso de la cadena hotelera grande, que opera en su totalidad en España, en el ejercicio 2007 facturó 283,77 millones de €, atendió a un total de 1,45 millones de clientes y sirvió 2,5 millones de cubiertos. El resultado de operaciones (EBITDA) se situó en 59,86 millones de euros y el resultado antes de impuestos, en 43,84 millones de € y terminó 2007 con una plantilla total de 4.315 empleados. Declara que “aunque la preocupación por la calidad siempre ha estado presente, el primer hotel se certificó en 1999 y este proceso ha continuado hasta 2006 y continua en la actualidad para los nuevos hoteles”.

En cuanto a los motivos que les llevó a implanta el sistema Q de calidad, sin lugar a dudas se destacan los factores internos, especialmente la mejora de los procesos internos y del trabajo en las áreas funcionales como “un motivo de influencia total”. Adicionalmente la mejora de la imagen de la cadena es otro de los motivos principales, lo que ha impulsado a la cadena a dotarse de unos premios internos de “excelencia en la gestión cuyo objetivo es reconocer la iniciativa, la eficiencia y la productividad, en el marco de las políticas estratégicas de la empresa, así como la coordinación que es preciso desarrollar en el ámbito de la misma”. Sin duda, el contar con un sistema certificado de gestión de la calidad ha contribuido en gran parte a ello.

En cuanto a los principales beneficios obtenidos la cadena hotelera declara, que los clientes y la imagen de la cadena son los principales beneficiados. Se han puesto en marcha diferentes iniciativas para mejorar la atención y el conocimiento del cliente entre ellas destacan “unas guías de buenas prácticas en atención al cliente. Estos documentos recogen el conocimiento imprescindible para poder ofrecer un servicio adecuado a cada uno de los colectivos con necesidades especiales. Se han realizado cinco guías diferentes, una para cada departamento en

contacto con el cliente; es decir, Dirección-Recepción, Pisos, Comedor, Cocina y Mantenimiento”.

En cuanto a las dificultades en la certificación han venido dadas principalmente por la edad de la cadena, fundada en 1928, que ha obligado a adecuar las instalaciones y el mobiliario, en muchos casos, para adecuarse a los requisitos de obligado cumplimiento de la certificación de calidad.

En el caso de la cadena hotelera mediana se trata de una cadena internacional que opera en España desde hace 20 años con diferentes marcas hoteleras y opera en el segmento medio-bajo del turismo profesional y urbano. Se localiza, principalmente, en las afueras de las principales ciudades españolas.

Esta cadena hotelera afirma que los principales motivos que la impulsaron a implantar el sistema de calidad fue la reducción de costes, es decir, “mejorar la eficiencia interna mediante reducir las reclamaciones de clientes y homogeneizar los procesos” y la mejora de la imagen de la cadena “el reconocimiento de que la cadena hotelera ofrece un buen producto y servicio a un precio asequible”. Su proceso de certificación comenzó en el año 2002.

Los beneficios obtenidos por la cadena hotelera mediana han sido, en primer lugar, de eficiencia interna ya que “han conseguido homogeneizar los servicios y los procesos” lo que ha llevado a “incrementar la satisfacción y fidelización del cliente”, segundo beneficio obtenido.

El cuanto a los inconvenientes del proceso de certificación, la cadena declara que han sido “en primer lugar el coste asociado a la adecuación de los requisitos de la norma, seguidos en segundo lugar de las resistencias internas al cambio, que han sido solventadas tras un proceso de comunicación interna y formación en todos los niveles”.

El hotel independiente se trata de un hotel urbano de propiedad familiar, que opera desde hace 35 años en el centro de ciudad. En el caso de este hotel los motivos para la certificación son distintos que los declarados por las cadenas hoteleras. Este hotel afirma que los motivos principales para plantearse la certificación en el sistema Q de calidad son debidos a factores externos exclusivamente, “debido a la presión de los clientes que preguntaban si estábamos certificados y la presión de la competencia, ya que la mayoría de nuestros competidores directos han implantado un sistema de calidad y no podíamos quedarnos atrás”.

Los beneficios percibidos por el hotel son la mejora de la imagen del hotel y la mejora de los resultados financieros, al “conseguir la confianza de los clientes que ha hecho que vengan una primera vez y repitan, vez tras vez”.

En cuanto a las dificultades se resaltan, como en el caso anterior, el coste de la certificación y “todo lo que incluye” y “convencer a la propiedad de la importancia de que tiene implantar un sistema de calidad para el futuro de la empresa”.

La última pregunta que se planteó a las empresas fue si creían que se iba a incrementar el número de certificados de calidad y porqué. A esta pregunta las tres empresas contestaron que “sin lugar a duda el número de certificados seguirá incrementándose”, ya que, por una parte, las cadenas hoteleras, ambas en proceso de expansión, admiten que certificarán los nuevos hoteles abiertos en 2007 y 2008. Por otra parte, admiten que “la promoción de la marca Q que se está haciendo provocará que mas empresas deseen diferenciarse de esa forma”.

3. Empirical study

3.1 Background studies

The literature on the dissemination of management tools and systems is extensive (Rogers, 1995; Teece, 1980). From these studies, it is apparent that the accumulative adoption of innovations over time can, in general terms, be said to follow a sigmoid curve. This sigmoid curve reflects: (i) few organisations adopting an innovation during its early stages (and hence a relatively ‘flat’ adoption curve in the initial stages); (ii) the rate of adoption then rising (and hence a steep rise in the curve); and (iii) the adoption process reaching a saturation point (with another ‘flattening’ in the curve of the adoption rate). Such a sigmoid curve is seen in the adoption of many innovations; for example, Stoneman (1995) claimed that this model provides a good description of the diffusion of new technologies.

Some studies of the dissemination of ISO quality standards have been reported in the academic literature. Corbett and Kirsch (2001) proposed a regression model to explain the number of ISO 14000 certificates in a given country on the basis of: (i) its exporting capacity; (ii) its degree of commitment to the environment; and (iii) the number of ISO 9000 certificates issued in that country. The authors concluded that the number of ISO 9000 certificates in a given country is one of the factors explaining the number of ISO 14000 certificates issued in the same country; however, they did not specify how such a dissemination occurs, and nor did they present an analysis of the effect of different sectors on dissemination (which the authors acknowledged would be of interest).

In another study of the dissemination of quality standards, Franceschini et al. (2004) established that the logistic curve (or ‘S-curve’) explains the dissemination of the ISO 9000. Such a logistic curve model was first applied in the nineteenth century by the Belgian mathematician Verhulst to account for the growth of a biological species. According to this model, the growth rate of a species is at its exponential maximum in the initial stages when there are few individuals to compete for limited resources, but later slows to zero when a certain saturation of available resources is reached. As applied to the growth in ISO certificates, the model is explained by the following expression:

$$N = \frac{N_0 K}{(K - N_0)e^{-r_0 t} + N_0}$$

in which:

N represents the number of certificates (as a function of time);

N₀ represents the number of certificates at the starting point;

K is the maximum level that can be reached (the saturation level); and

r₀ is the initial growth rate.

On the basis of the above work, Marimon et al. (2006) perceived that the logistic model might also be applicable to the dissemination of the ISO 14000 standard. They showed that the increase in the number of certificates for both the ISO 9000 and ISO 14000 standards was proportional to the number of existing certificates at a given time, and that the dissemination in different sectors was rather similar. These findings were in accordance with those of Corbett and Kirsch (2001) and Vastag (2003), who had already noted that the number of new ISO 14000 certificates in a certain country is related to the number of ISO 9000 certificates.

Casadeus et al. (2008) applied the logistic model to prevailing data to obtain a forecast of the ISO 14000 and ISO 9000 certificates worldwide as a percentage of their saturation. The results are shown in Figure 2. It is apparent that the data presented a near-perfect logistic curve, with a fit of better than 99% for r squared in both curves. Casadeus et al. (2008) reported that the number of worldwide ISO 14000 certificates at the time of their study was at 64.6% of the predicted saturation level and that of ISO 9000 was at 84.6% of predicted saturation level. If 95% is taken as a possible saturation point, the forecast according to this model is a maximum of 160,000 ISO 14000 certificates and 870,000 ISO 9000 certificates worldwide.

<<Figure 2>>

Marimon et al. (2006) have conducted individual analyses of various countries, which have demonstrated that logistic curves apply to virtually all of the available empirical data.

3.2 Aims and methodology of present study

In view of the good results obtained from the logistic model with respect to the ISO 9001:2000 quality standard and the ISO 14001:2004 environmental standard, the present study applied the same model to analysis of the emerging tourist quality-management standards.

For convenience, the standards for analysis were categorised into blocks. The first block (designated as ‘Block 1999’ in the present study) represented standards produced by the Instituto de la Calidad en la Restauración Española (ICRE) (‘Institute for Spanish Quality Catering’) and the Asociación Turística de Estaciones de Esquí y de Montaña (ATUDEM) (‘Tourist Association of Ski and Mountain Resorts’) prior to the setting up of the ICTE in 2000. These standards applied to three sub-sectors (hotels and apartments, ski resorts, and small residences). The second block

for consideration (designated as 'Block 2001' in the present study), represented standards issued by ICTE for a further six sub-sectors (travel agencies, rural accommodation, camp sites, restaurants, convention bureaux, and offices). The third block ('Block 2004') referred to ICTE standards for spas, natural spaces, supra-municipal offices, convention centres, and beaches). The final block ('2006') referred to standards for coaches.

By December 2006, 1,945 enterprises had been certified to specific quality standards for the tourist sector in Spain. Two sub-sectors (golf courses and time share enterprises) still had no standards at this time.

3.3 Results

Table 5 shows the tourist enterprises that were 'Q' certified by ICTE in the four blocks of years described above (1999, 2001, 2004, and 2006).

<<Table 5>>

As shown in Table 5, travel agencies represented more than half the total number of certifications, with a large surge in the number of certifications in 2004 and a smaller surge in certifications in 2006. The mass certification of travel agencies in these two years is explained by the fact that a few companies, which have agencies distributed all over Spain, dominate this sub-sector. A decision taken centrally in one of these companies thus provoked a large number of simultaneous certifications. Because these surges in two particular years had the potential to distort the data in the model, two analyses were undertaken—one with all the data and another excluding the travel agency sub-sector.

Figure 3 shows the results of the analysis using all the data. As can be seen in the figure, the proposed model applies to the evolution of Q certifications in Spain: the coefficient of determination was near to one, and the parameters indicating growth (r_0) and saturation level (k) were both statistically significant at a 0.05 level. However, due to the fact that the available time series is very short, it has been observed that the 95% trust interval for these parameters is quite wide. Bearing it in mind, the forecast saturation level is 2,589 enterprises, which will be reached in 2009. At the end of 2006, 75% of that level had been reached.

<<Figure 3>>

Figure 4 presents the results of the analysis excluding the travel agency sub-sector. In this case, the growth rate was much reduced, as was to be expected in view of the travel agency sub-sector having expanded so quickly. However, no definite conclusion could be drawn about the final saturation level because the model's k parameter was not significant (at a 0.05 level). This analysis cannot therefore be validated, although it can be used to indicate a future tendency.

<<Figure 4>>

Conclusion

Ground-breaking tourist quality schemes were developed in Spain in the 1990s, before being incorporated into a comprehensive system—known as SCTE ('Spanish Tourist Quality System'—from 1996 onwards. This system has four components:

quality standards for each specific tourist sub-sector, which define process and service standards, and quality service requirements;

a certification system whereby an independent third party guarantees that the enterprises enforce standards;

the 'Q' quality trademark; and

a managing body, known as ICTE ('Institute for Spanish Tourist Quality')—which promotes the system and is responsible for its enforcement, integrity, and diffusion.

This quality-management system, which is customised for each tourist sub-sector, is unique in the world.

The present study has focused on the impact of these standards in the Spanish tourism sector. Utilising a model verified in the literature (Marimon et al., 2006; Casadeus et al., 2008), an analysis of these standardised management systems has enabled a reliable forecast to be made of the future diffusion of these standardised management systems in the tourist sector. Although the data are specific to Spain, the results do indicate future developments in other countries in which similar standards are being developed or in which the emerging ISO tourist standards are applied.

It is apparent that standardisation of quality management will increase in tourism in coming years. The worldwide diffusion of ISO 9001 and ISO 14001 in many service sectors (Marimon et al., 2006) and the findings of the present study with respect to the Spanish standards provide an indication of what is likely to happen in the service sector as a whole in most countries. Es interesante hacer notar que las personas del sector entrevistadas coinciden en afirmar que el número de certificaciones seguirá creciendo, debido tanto a factores externos como internos. Sin duda, será interesante profundizar en próximos estudios sobre el impacto organizativo que en las empresas de servicios tienen los certificados de calidad.

As noted above, an important limitation in the model used here is acknowledged. The large number of certifications in one sub-sector (travel agencies) certainly reduced the reliability of the model. Nonetheless, a definite tendency is apparent, and the model does clearly demonstrate the growing importance of quality-management standards in the tourist sector. As the number of issued certificates inevitably increases, more reliable forecasts will be facilitated as valid adjustments are made to the predictive model.

It is interesting to speculate how the diffusion of national standards of the type examined in this study will be affected by the creation of similar ISO international standards. Although this question has not yet been analysed in the academic literature, it seems likely that the impact of

the two might be complementary. The transposition of a sectoral standard to a national standard, as occurred with some of the standards analysed in this study, appears to have strengthened the impact, even with little essential change to the standard.

Finally, although the recent history of certification of tourist management systems has enabled general sectoral analyses and forecasts to be made, the relatively small number of standards in each sub-sector limits detailed analysis of each sub-sector individually. This represents an acknowledged limitation of early studies conducted in this field.

References

- Acharya, U.H. and Ray, S. (2000). ISO 9000 certification in Indian industries: a survey. *Total Quality Management*, 11(3), 261-266.
- Ahire, S.L., O'Shaughnessy, K.C., (1998). The role of top management commitment in quality management: an empirical analysis of the auto parts industry. *International Journal of Quality Science*, 3 (1),5-37.
- Ahire, S.L., Dreyfus, P., (2000). The impact of design management and process management on quality: an empirical examination. *Journal of Operations Management*, 18, 549-575.
- Albacete, C.A., Fuentes, M. and Llorens, F.J. (2007). Service quality measurement in rural accommodation, *Annals of Tourism Research*. 34(1), 45-65.
- Alonso, M.M., Barcos, L. and Martín, J.I. (2006). *Gestión de calidad de los procesos turísticos, Síntesis*, Madrid, Spain.
- Benner M. J. And Veloso, F. M. (2008). ISO 9000 practices and financial performance: A technology coherence perspective. *Journal of Operations Management*, 26, 611-629.
- Bhuiyan, N. and Alam, N. (2005). An investigation into issues related to the latest version of ISO 9000. *Total Quality Management & Business Excellence*, 16(2), 199-213.
- Briggs, S., Sutherland, S. and Drummond, S. (2007). Are hotels serving quality? An exploratory study of service quality in the Scottish hotel sector. *Tourism Management*, 28(4), 1006-1019.
- Buttle, F. (1997). ISO 9000: motivations marketing and benefits. *International Journal of Quality and Reliability Management*, 14(9), pp.936-947.
- Camisón, C., Cruz S. and Gonzalez, T. (2006). *Gestión de la Calidad: Conceptos, enfoques, modelos y sistemas*. Pearson-Prentice Hall. Madrid.
- Camisón, C. (2004). Estrategia de calidad turística. El papel de los sistemas de acreditación y certificados de calidad. *Mediterráneo Económico*, 5, 118-168.
- Camisón, C. and Yepes, V. (1994). "Normas ISO 9000 y gestión de la calidad total en la empresa turística", Ponencias I Congreso de Calidad de la Comunidad Valenciana, Ed. Díaz de Santos, Valencia, Spain.
- Casadesus, M. and Gimenez, G. (2000). The benefits of the implementation of the ISO 9000 standard: empirical research in 288 Spanish companies. *TQM Magazine*, 12(6), 432-441.
- Casadesus, M. and Karapetrovic, S. (2005). Has ISO 9000 lost some of its lustre? A longitudinal impact study. *International Journal of Operations and Production Management*, 25(6), 580-596.
- Casadesus, M. and Heras, I. (2005). El boom de la calidad en las empresas españolas. *Universia Business Review*, tercer trimestre, 90-101.
- Casadesus, M., Marimon, F. and Heras, I. (2008). ISO 14001 diffusion after the success of the ISO 9001 model, to appear in *Journal of Cleaner Production*.
- Chan, E.S.W. and Wong, S.C.K. (2006). Motivations for ISO 14001 in the hotel industry. *Tourism Management*, 27, 481-492.
- Clark, D. (1999). What drives companies to seek ISO 14000 certification?. *Pollution Engineering International*, Summer, 14-15.

- Corbett, C.J. and Kirsch, D.A. (2001). International diffusion of ISO 14000 certification. *Production and Operations Management*, 10(3), 327-342.
- Corbett, C.J.; Montes-Sancho, M.J. and Kirsch, D. (2005). The financial impact of ISO 9000 Certification in the United States: An empirical analysis. *Management Science*, 51(7), 1046-1059.
- Cua, K.O., McKone, K.E., Schroeder, R.G., 2001. Relationships between implementation of TQM, JIT, and TPM and manufacturing performance. *Journal of Operations Management*, 19, 675-694.
- Das, A., Handfield, R.B., Calantone, R.J., Ghosh, S., (2000). A contingent view of quality management—the impact of international competition on quality. *Decision Sciences* 31, 649-690.
- Del Brío, J. A.; Fernández, E.; Junquera, B. and Vázquez, C. J. (2001). Motivations for adopting the ISO 14001 Standard: A study of Spanish industrial companies. *Environmental Quality Management*, 4, 13-28.
- Dick, G., Gallimore, K. and Brown, J.C. (2001). ISO 9000 and quality emphasis. *International Journal of Service Industry Management*, 12(2) 114-136.
- Dick, G., (2000). ISO 9000 certification benefits, reality or myth?. *The TQM Magazine*, 12(6), 365-371.
- Dirección General de Turismo (1998). *Plan de Calidad Turística Española*. Ministerio de Industria, Turismo y Comercio, Madrid, Spain.
- Esteve, R. (2001). Nuevo segmento emergente de turismo: Los parques temáticos. *Cuadernos de Turismo*, 7 35-54.
- Figuerola, M. (2006), El modelo turístico español. Déficit, retos y oportunidades. In Sáez, A. Martín, P. and Pulido, J. I. eds. *Estructura Económica del Turismo*, pp. 369-416, Síntesis, Madrid, Spain.
- Foro Calidad (2006). Certificación en España según normas UNE-EN-ISO 9001 y 14001. *Forum Calidad*, Madrid, Spain.
- Franceschini, F., Galetto, M. and Gianni, G. (2004). A new forecasting model for the diffusion of ISO 9000 standard certifications in European countries. *International Journal of Quality & Reliability Management*, 21(1), 32-50.
- Giménez, G.; Casadesús, M. and Valls, J. (2003). Using environmental management systems to increase firms' competitiveness. *Corporate Social Responsibility and Environmental Management*, 10, 101-110.
- Go, F. M and Govers, R. (2000). Integrated quality management for tourist destinations: a European perspective on achieving competitiveness. *Tourism Management*, 21(1), 79-88.
- González, A. M. and Bello, L. (2002). The construct "lifestyle" in market segmentation: The behaviour of tourist consumers. *European Journal of Marketing*, 36, 51-85.
- Graefe, A.R. and Vaske, J.J (1987). A framework for managing quality in the tourist experience. *Annals of Tourism Research*, 14(3), 390-404.
- Gunnlaugsdottir, J. (2002). The quality must be on record: a survey of organisations having an ISO 9000 certification in Iceland. *Records Management Journal*, 12(2), 40-47.
- Gustafsson, R., Klefsjo, B., Berggren, E. and Granfors-Wellemets, U. (2001). Experiences from implementing ISO 9000 in small enterprises - a study of Swedish organisations. *The TQM Magazine*, 13(4), 232-246.
- Hall G. and Higham D. J. (2005), *Tourism, recreation and climate change*. Channel View Publications, Clevedon, USA.
- Heras, I. (2006), "How quality management models influence company results. Conclusions of an empirical study based on the delphi method", *Total Quality Management & Business Excellence*, Vol. 17, No. 6, pp. 775-794.
- Heras, I. (dir), Arana, G., Camisón, C., Casadesús, M. and Martiarena, A. (2007), *Análisis del efecto de la implantación de sistemas y modelos de la Gestión de la Calidad en la*

- competitividad de las empresas de la CAPV*, Instituto Vasco de Competitividad – Fundación Deusto San Sebastián, Spain.
- Heras, I.; Dick, G.P.M and Casadesus, M. (2002). ISO 9000 registration's impact on sales and profitability. A longitudinal analysis of performance before and after accreditation. *International Journal of Quality & Reliability Management*, 19(6), 774-791.
- Ho, D.C.K., Duffy, V.G., Shih, H.M., (2001). Total quality management: an empirical test for mediation effect. *International Journal of Production Research*, 39, 529–548.
- Huang, F., Horng, C. and Chen, C. (1999). A study of ISO 9000 process, motivation and performance. *Total Quality Management*, 10(7), 1009-1025.
- ICTE (2008). Retrieved May 19th 2008, from <http://www.ictes.es>
- INE (2006), Turismo receptor en España, Serie 1995-2006. Instituto Nacional de Estadística. Retrieved from http://www.ine.es/inebmenu/menu8_ser.htm#4
- INE (2006b), Movimientos turísticos en frontera 2006 FRONTUR. Instituto Nacional de Estadística. Retrieved from <http://www.ine.es>
- Instituto de Estudios Turísticos (2007), Balance del Turismo en España en 2006. Ministerio de Industria, Turismo y Comercio. Retrieved from www.iet.tourspain.es
- ISO (2006), The ISO survey of certifications - 2005, International Organization for Standardization, Geneva, Switzerland.
- Karapetrovic, S. and Willborn, W. (2001). ISO 9000 Quality Management Standards and Financial Investment Services. *The Service Industries Journal*, 21(2), 117 – 136
- Lagodimos, A.G., Dervitsiotis, K.N. and Kirkagalis, S.E. (2005). The penetration of ISO 9000 certification in Greek industries. *Total Quality Management & Business Excellence*, 16(4), 505-527.
- Lee, K.S. and Palmer, E. (1999). An empirical examination of ISO 9000-registered companies in New Zealand. *Total Quality Management*, 10(6), 887-899.
- Leung, H.K.N., Chan, K.C.C. and Lee, T.Y. (1999). Costs and benefits of ISO 9000 series: a practical study. *International Journal of Quality and Reliability Management*, 16(7), 675-691.
- Lima, M.A.M., Resende, M. and Hasenclever, L. (2000). Quality certification and performance of Brazilian firms: An empirical study. *International Journal of Production Economics*, 66(2), 143-147.
- Macleod D. V.L. (2004). *Tourism, globalization and cultural change: An island community perspective*. Channel View Publications, Clevedon, USA.
- Magd, H.A.E.(2006). An investigation of ISO 9000 adoption in Saudi Arabia. *Managerial Auditing Journal*, 21(2), 132-147.
- Marimon, F., Casadesús, M. and Heras, I. (2006). ISO 9000 and ISO 14000 standards: an international diffusion model. *International Journal of Operations and Production Management*, 26(2) 141-165.
- Martinez-Lorente, A.R., Dewhurst, F.W., Gallego-Rodriguez, A., (2000). Relating TQM, marketing and business performance: an exploratory study. *International Journal of Production Research* 38(14), 3227–3246.
- Mezher, T., Ajam, M. and Shehab, M. (2004). The historical impact of ISO 9000 on Lebanese firms. *Quality Assurance*, 11, 25-42.
- Mohammed, M. (2000). The ISO 14001 EMS implementation process and its implications. A case study of Central Japan. *Econ-Management and Auditing*, 25(2), 177-188.
- Morris, P. W. (2006). ISO 9000 and financial performance in electronics industry. *Journal of American Academy of Business*, 8(2), 227-235.
- Naveh, E. and Marcus, A. A. (2005). Achieving competitive advantage through implementing a replicable management standard: installing and using ISO 9000. *Journal of Operational Research*, 24(1), 1-26.

- Nakamura, M.; Takahashi, T. and Vertinsky, I. (2001). Why Japanese firms choose to certify: A study of managerial responses to environmental issues. *Journal of Environmental Economics and Management*, 42(1), 23-52.
- Nicholls, S. (2004). Climate change and tourism. *Annals of Tourism Research*, Vol. 31, No. 1, pp. 238-240.
- Poksinska, B., Dahlgard, J.J. and Eklund, J.A.E. (2003). Implementing ISO 14000 in Sweden: motives, benefits and comparisons with ISO 9000. *International Journal of Quality & Reliability Management*, 20(5), 585-606.
- Porter, M. (1996). What is strategy? *Harvard Business Review*, 74(6), 61-78.
- Prajobo, D.I. (2005). The comparative analysis of TQM practices and quality performance between manufacturing and services firms. *International Journal of Service Industry Management*, 16(3), 217-228.
- Prajogo, D.I., Sohal, A.S., (2003). The relationship between TQM practices, quality performance, and innovation performance: An empirical examination. *International Journal of Quality & Reliability Management*, 20 (8), 901–918.
- Quazi, H. A.; Khoo, Y. K.; Tan, C. M. and Wong, P. S. (2001). Motivation for ISO 14000 certification: development of a predictive model. *The International Journal of Management Science*, 29(6), 525–542.
- Reichel, A.; Lowengart, O. and Milman, A. (2000). Rural tourism in Israel: service quality and orientation. *Tourism Management*, 21(5), 451-459.
- Rogers, E. M. (1995), *Diffusion of innovations*, Free Press, New York, USA.
- Ruzevicius, J., Adomaitiene, R. and Sirviadaite, J. (2004). Motivation and efficiency of quality management systems implementation: a study of Lithuanian organizations. *Total Quality Management & Business Excellence*, 15(2), 173-189.
- Sanchez-Rodriguez, C., Martinez-Lorente, A.R., (2004). Quality management practices in the purchasing function: An empirical study. *International Journal of Operations & Production Management*, 24(7), 666–687.
- Shannon H. S.; Robson L. R. and Sale J. E. M (2001). Creating safer and healthier workplaces: Role of organizational factors and job characteristics. *American Journal of Industrial Medicine*, 40(3), 319 - 334
- Sharma, D. S. (2005). The association between ISO 9000 certification and financial performance. *The International Journal of Accounting*, 40, 151-172.
- Sharpley, R. and Forster, G. (2003). The implications of hotel employee attitudes for the development of quality tourism: the case of Cyprus. *Tourism Management*, 24(6), 687-697.
- Stoneman, P. (1995), *Handbook of the Economics of Innovation and Technological Change*, Blackwell Handbooks in Economics, Oxford, UK.
- Stuart, F.I. and Tax, S.S. (1996). Planning for service quality: an integrative approach. *International Journal of Service Industry Management*, 7(4), 58-77.
- Sun, H., (2000). A comparison of quality management practices in Shanghai and Norwegian manufacturing companies. *International Journal of Quality & Reliability Management*, 17 (6),636–660.
- Sureshchandar, G.S., Rajendram, C. and Anantharaman, R.M. (2001). A holistic model for total quality service. *International Journal of Service Industry Management*, 12,(4), 378-412.
- Talón, P., González, L. and Figueroa, C. (2007). La nueva realidad del sector hotelero español. XXI Congreso Nacional and XVII Congreso Hispano-Francés de la Academia Europea de Dirección y Economía de la Empresa (AEDEM). Spain.
- Tan, K.C., (2001). A structural equation model of new product design and development. *Decision Sciences*, 32 (2), 195–226.
- Teece, D. (1980). The diffusion of an administrative innovation. *Management Science*, 26(5) 464-470.

- Terlaak, A. and King, A. A. (2006). The effect of certification with ISO 9000 quality management standard: a signaling approach. *Journal of Economic Behavior and Organization*, 60(4), 579-602.
- Tribe, J. (1999), *Economía del ocio y el turismo*, Sintesis, Madrid, Spain.
- Trunfin, M., Petruzzellis, L. and Negro, C. (2006). Tour operators and alternative tourism in Italy: Exploiting niche markets to increase international competitiveness. *International Journal of Contemporary Hospitality Management*, 18(5), 426-438.
- Tsaur, S. and Yin-Chun Lin, Y.C. (2004). Promoting service quality in tourist hotels: the role of HRM practices and service behaviour. *Tourism Management*, 25(4), 471-481.
- Vastag, G. (2003). Revisiting ISO 14000: A new “Look” at the drivers of certification. Working Paper Indiana University, USA.
- Van der Wiele, T., van Iwaarden, J., Williams, R. and Dale, B. (2005). Perceptions about the ISO 9000:2000 quality system standard revision and its value: the Dutch experience. *International Journal of Quality & Reliability Management*, 22(2), 101-119.
- Vloeberghs, D. and Bellens, J. (1996). Implementing the ISO 9000 standards. *Quality Progress*, 29(6), 43-48.
- Wall, G. (1995). Quality management in urban tourism. *Annals of Tourism Research*, 22(4), 939-940.
- Wayhan, V.B. and Balderson, E.L. (2007). TQM and financial performance: What has empirical research discovered?. *Total Quality Management & Business Excellence*, 18(4), 403-412.
- Wayhan, V.B.; Kirche, E.T and Khumawala, B. M. (2002). ISO 9000 certification: The financial performance implications. *Total Quality Management*, 13(4), 217-231.
- Withers, B.E. and Ebrahimpour, M. (2001). Impacts of ISO 9000 registration on European firms: a case analysis. *Integrated Manufacturing Systems*, 12(2), 139-151.

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Table 1: Private quality-system initiatives in Spain

System	Notes
Andalucía Gran Reserva	Trade name of high-quality hotel establishments in Andalusia
Club de Calidad Casonas Asturianas	Trade name of group of small high-quality hotel establishments in Asturias that are subject to strict periodic audits of equipment, management, and service
Mesas de Asturias “Excelencia Gastronómica”	Trade name of catering establishments in the Principality of Asturias that comply with certain conditions
Aldeas de Asturias. Calidad Turística (Villages of Asturias. Tourist Quality)	Promotes the quality of rural village houses and apartments in Asturias
Club de Calidad de las Casas Rurales de la Comunidad Valenciana. (Quality Club of Rural Homes in the region of Valencia)	Group of country cottages, hostels, and country villas that define and audit their physical, service, and organisational standards through inspection by other members of the group
Club de Calidad de Hoteles de Alicante. (Quality Club of Hotels in Alicante)	Small, family-run hotels located in Alicante that define their own physical, service, and organisational standards
Instituto de Turismo Responsable. (Institute of Responsible Tourism)	A non-governmental organisation that aims to promote responsible tourism; a certification system provides evidence of high-quality environmental management and service quality
Plan de Excelencia Hotelera de Puerto de la Cruz	A restructuring program of quality tourist destinations in Puerto de la Cruz.

Source: Dirección General de Turismo (1998) and Alonso et al (2006).

Table 2: Tourist quality standards in Spain

Original Standards	Corresponding standard (nationwide)
Quality standard for Travel Agencies.	UNE 189001:2006
Quality standard for Small-sized Tourist Accommodation.	
Quality Standard for Tourist Coach Companies.	
Quality Standard for Spas.	
Quality Standard for Camp Sites and Holiday Resorts.	UNE184001:2007
Quality Standard for Golf Courses.	UNE 188001:2008
Quality Standard for Rural Accommodation.	UNE183001:2006
Quality Standard for Convention Bureaux.	
Quality Standard for Rural, Protected Spaces.	
Quality standard for Ski and Mountain Resorts.	UNE 188002:2006
Quality standard for Hotels and Tourist Apartments.	UNE 182001:2005 actualizada en 2008
Quality Standard for Tourist Information.	
Quality Standard for Supranational Tourist Information Offices.	
Quality Standard for Convention Centres.	
Quality Standard for Beaches.	
Quality Standard for Restaurants.	UNE 167000:2006 and from UNE 167001 to UNE 67011
Quality Standard for Time Share Companies.	

Source: In-house compilation.

Table 3: International quality tourist standards

Number	Standard
ISO 18513:2003	Tourism services -- Hotels and other types of tourism accommodation -- Terminology
ISO 24801-1:2007	Recreational diving services -- Safety related minimum requirements for the training of recreational scuba divers -- Part 1: Level 1 -- Supervised diver
ISO 24801-2:2007	Recreational diving services -- Safety related minimum requirements for the training of recreational scuba divers -- Part 2: Level 2 -- Autonomous diver
ISO 24801-3:2007	Recreational diving services -- Safety related minimum requirements for the training of recreational scuba divers -- Part 3: Level 3 -- Dive leader
ISO 24802-1:2007	Recreational diving services -- Safety related minimum requirements for the training of scuba instructors -- Part 1: Level 1
ISO 24802-2:2007	Recreational diving services -- Safety related minimum requirements for the training of scuba instructors -- Part 2: Level 2
ISO 24803:2007	Recreational diving services -- Requirements for recreational scuba diving service providers

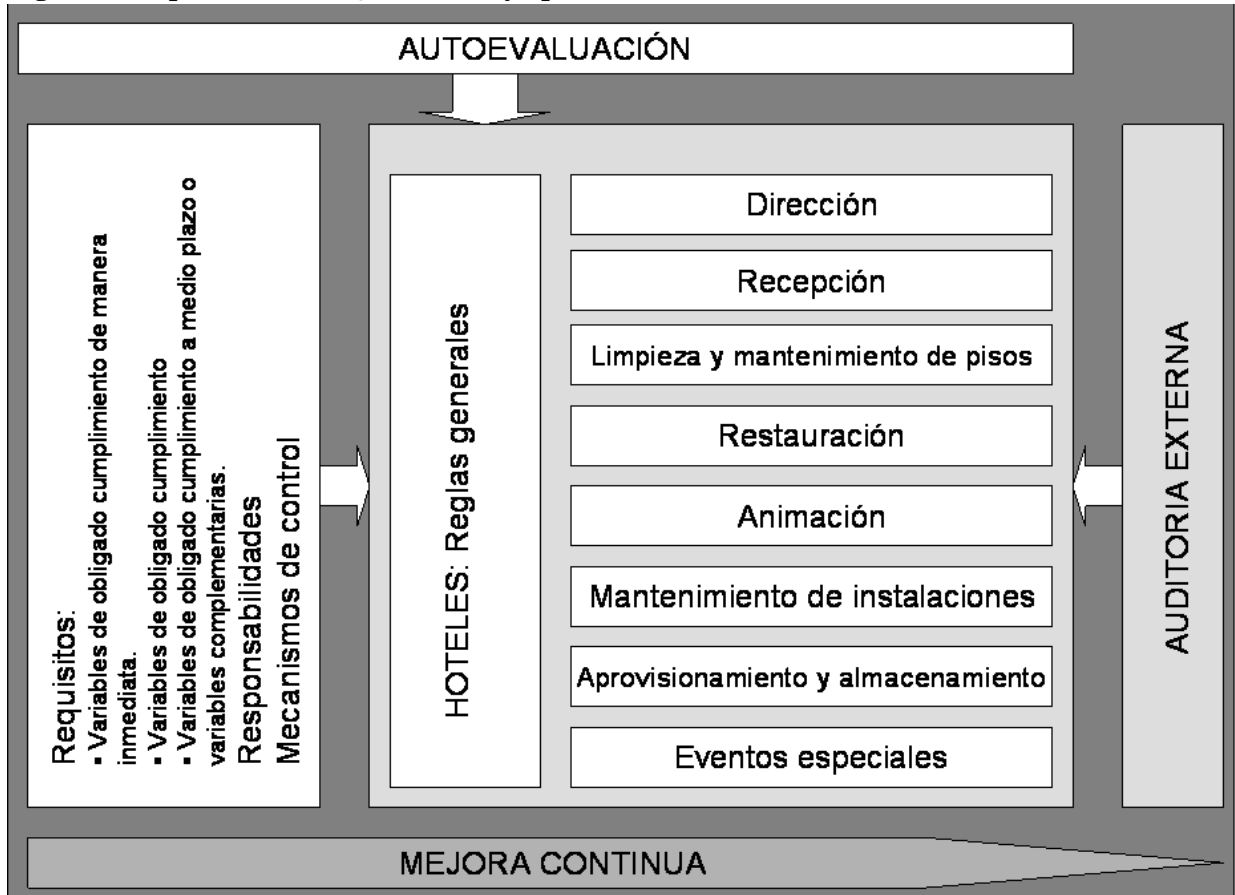
Source: In-house compilation.

Table 4: Some differences between the ISO quality systems and the Spanish ‘Q’ standards

ISO 9001:2000 and ISO 14001:2004	Spanish tourist quality trademark (‘Q’)
<ul style="list-style-type: none">• Quality assurance and environmental management system• The enterprise designs the QMS, which ensures and maintains quality levels, predefined by a powerful documentary base• Service levels are strategic decisions undertaken by management• Applicable to any industry and organisation• No specific quality level guaranteed, but service is adjusted to level of specifications set out by the establishment itself	<ul style="list-style-type: none">• Standardisation system that establishes quality and service standards• Self-diagnosis• All quality and service specifications included in the standard itself• Light documentary system• Focused on tourist activity• Provides information about required quality level, which might influence clients’ purchasing decisions• Environmental management of the establishment

Source: In-house compilation.

Figure 1: Esquema norma Q de hoteles y apartamentos



Source: In-house compilation.

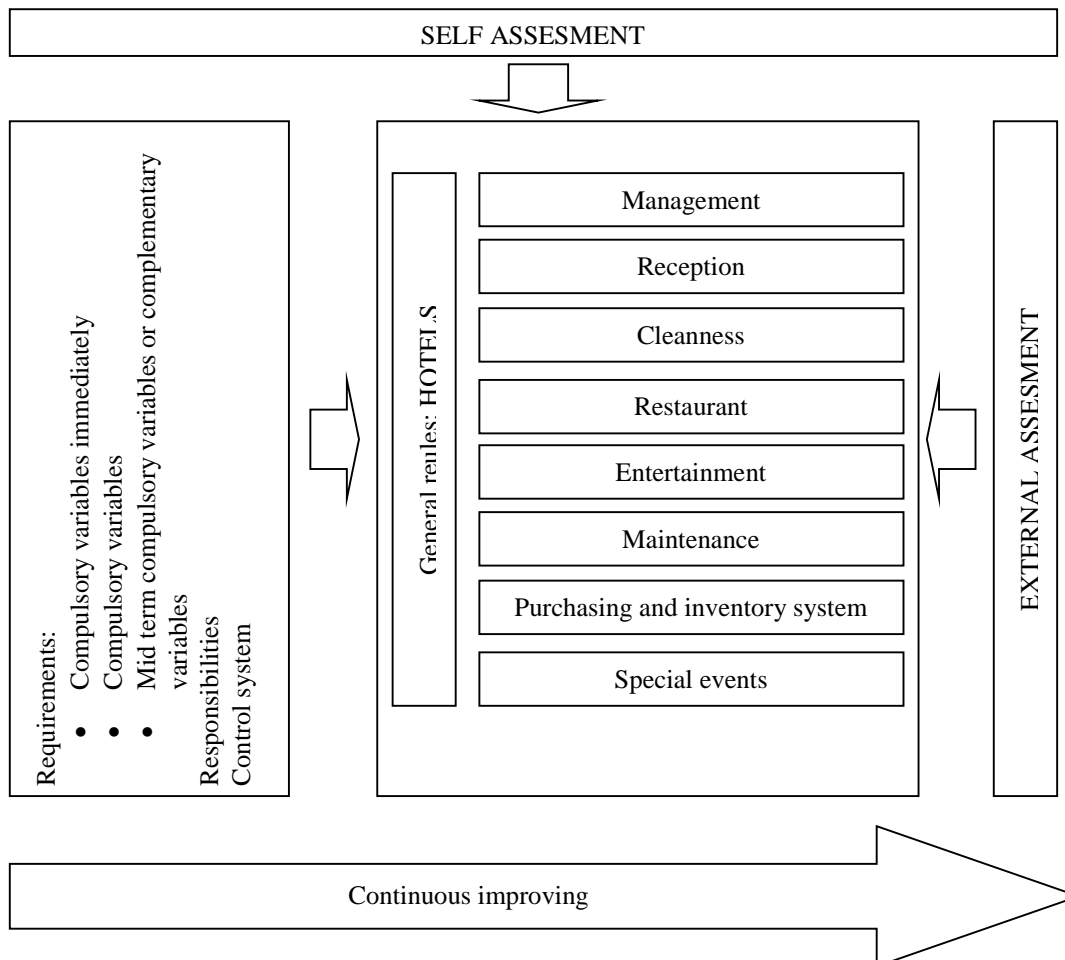
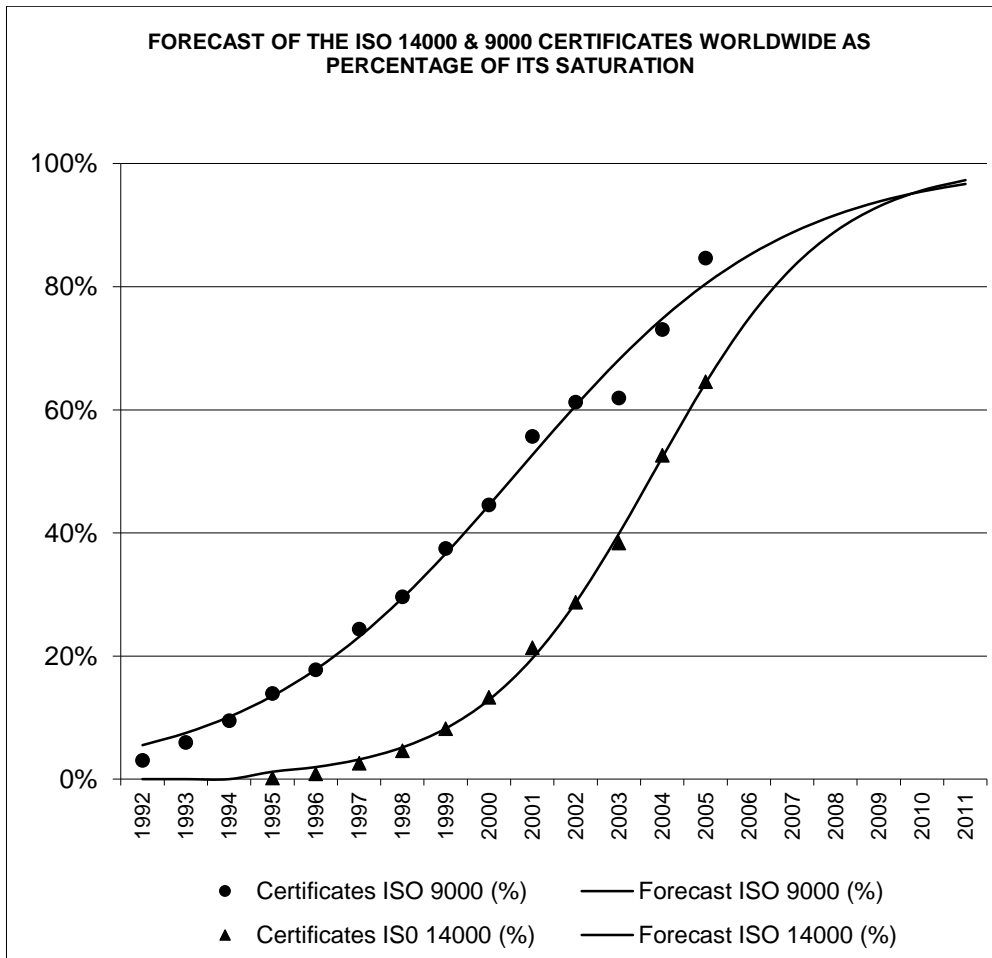


Figure 2: Forecast of ISO 14000 and ISO 9000 certificates worldwide as a percentage of saturation



Forecast of ISO certificates worldwide considering the logistic curve.

ISO 14000		ISO 9000		
Freedom degrees	Sum. Squares	Freedom degrees	Sum. Squares	
Regression	3	29504803542.73	3	2407501349672
Residual	7	25727264.27	11	6761130320.65
Uncorrected Total	10	29530530807	14	2414262479993
(Corrected total)	9	14611876279.64	13	772653744844.4
R squared	.998		.991	

	Value	LL	UL	Value	LL	UL
N_0	2063.40	1265.8	2861.0	50818.44	32629.4	69007.5
K	172209.2	137517.0	206901.3	917655.0	749629.5	1085680.5
r_0	0.5003	0.4327	0.5679	0.3271	0.2601	0.3940

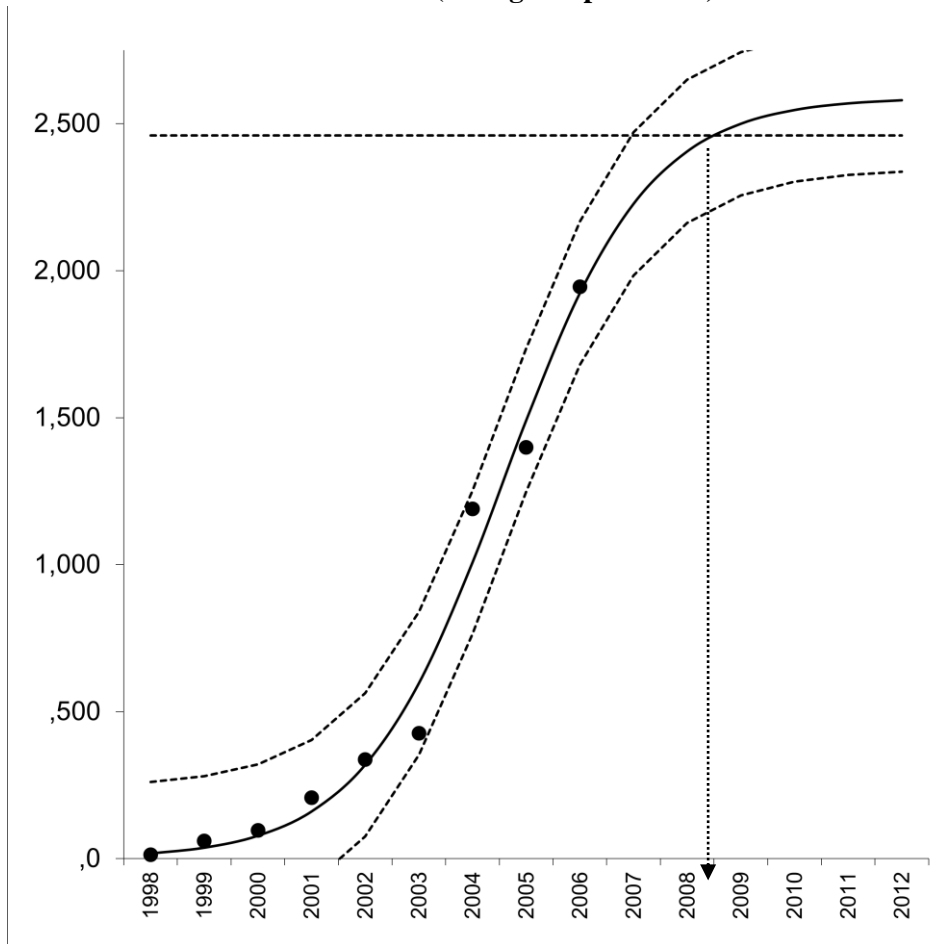
Source: Casadesús *et al.* (2008)

Table 5: Tourist enterprises 'Q' certified by ICTE

	Block 1999			Block 2001						Block 2004					06		
	Hotels and apartments	Ski resorts	Small residences	Travel agencies	Rural accommodation	Camp Sites	Restaurants	Convention Bureaux	Tourism Information Offices	Spas	Natural Spaces	Supra-municipal Offices	Convention Centres	Beaches	Coaches	TOTAL	ACCUMULATED TOTAL
1998	14	0	0													14	14
1999	39	5	2													46	60
2000	32	4	0													36	96
2001	35	2	0	42	18	5	10	0	0							112	208
2002	54	1	2	46	9	1	14	1	1							129	337
2003	26	0	5	4	33	3	17	0	0	0	2	0	0	0		90	427
2004	47	0	10	660	15	3	12	0	1	0	2	0	0	13		763	1190
2005	56	0	8	56	35	2	21	1	8	4	5	1	2	10		209	1399
2006	117	0	18	289	39	3	15	2	13	11	4	3	2	27	3	546	1945
	420	12	45	1097	149	17	89	4	23	15	13	4	4	50	3		

Source: In-house compilation, based on data provided by the Spanish Tourist Quality Institute (ICTE)

Figure 3: Forecast of Spanish Tourist QMS certificates in accordance with logistic curve (taking complete data)



Forecast of Spanish Tourist QMS certificates considering the logistic curve (taking complete data).

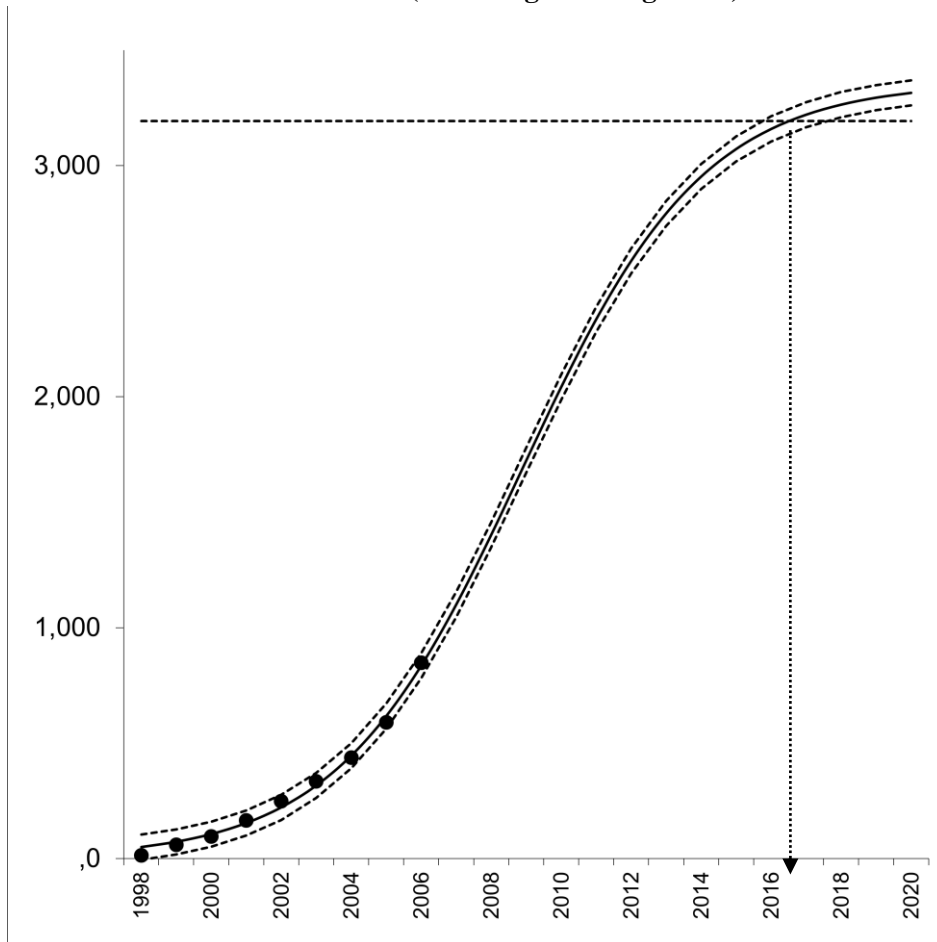
	Freedom deg.	Sum. Squares
Regression	3	7434277.5
Residual	6	74222.5
Uncorrected Total	9	7508500.0
(Corrected total)	8	3928836.0
R squared	.981	

	Value	Str. error	LL	UL
No	17.62	14.73	-18.42	53.65
K	2589.45	598.91	1123.96	4054.94
r ₀	.756	.169	.342	1.17

LL: Lower limit of the 95% confidence interval (the left dotted line in the figure).
 UL: Upper limit of the 95% confidence interval (the right dotted line in the figure).

Source: Casadesús *et al.* (2008)

Figure 4: Forecast of Spanish Tourist QMS certificates in accordance with logistic curve (excluding travel agencies)



Forecast of certificates in Spain considering the logistic curve (excluding travel agencies)

	Freedom deg.	Sum Squares
Regression	3	1471331.55
Residual	6	3691.45
Uncorrected Total	9	1475023.00
(Corrected total)	8	605777.56
R squared	.994	

	Value	Stdr. error	LL	UL
N ₀	50.05	10.03	25.51	74.59
K	3361.18	2846.56	-3604.10	10326.46
r ₀	.39	.05	.25	.52

LL: Lower limit of the 95% confidence interval (the left dotted line in the figure).
 UL: Upper limit of the 95% confidence interval (the right dotted line in the figure).

Source: Casadesús *et al.* (2008)